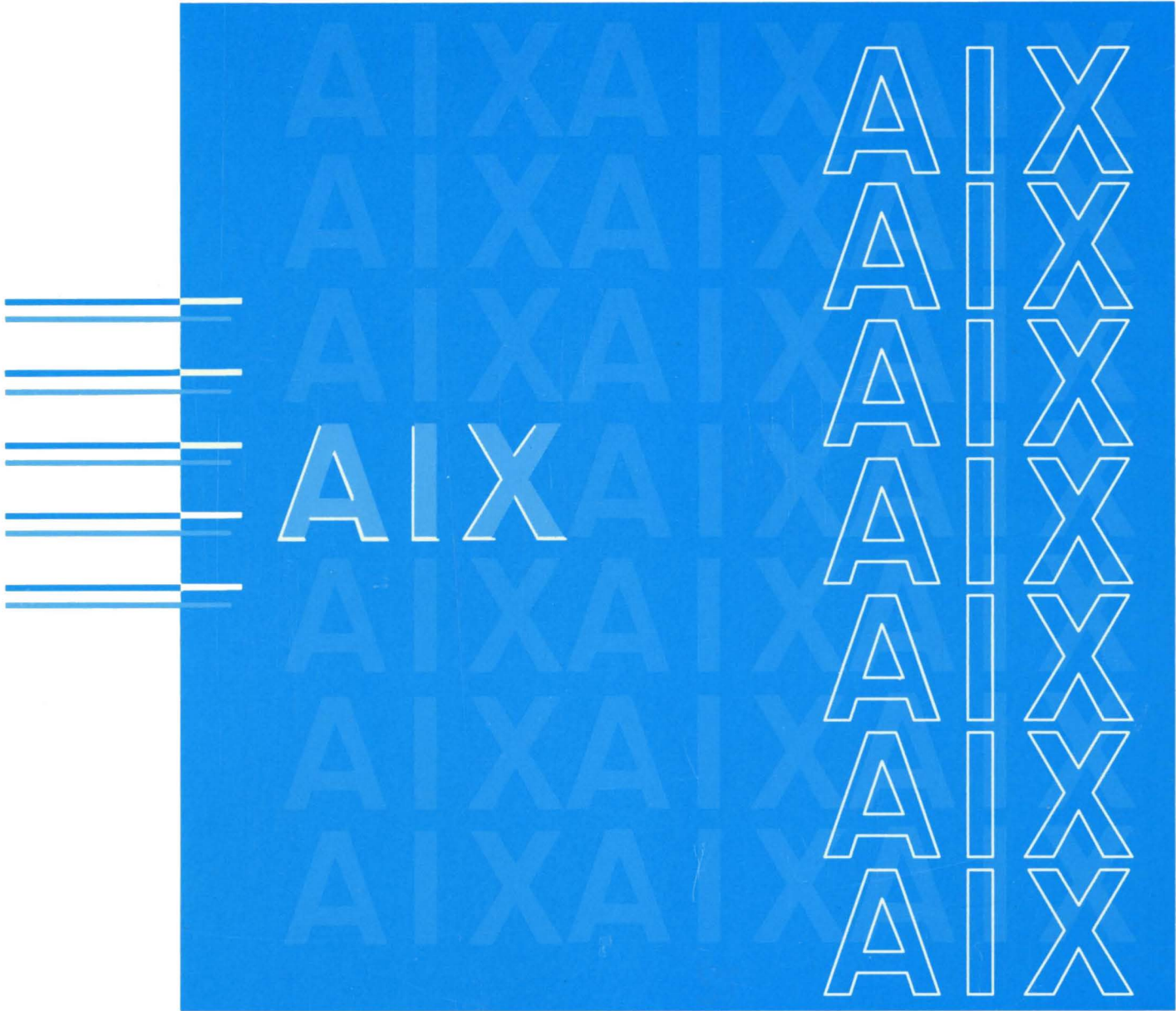


AIX Access for DOS Users
Host Installation Guide



AIXTM Access for DOS Users Host Installation Guide

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Introduction

This guide tells you everything you need to know to install the AIX Access for DOS Users host software and start the Access program. The contents of this guide are as follows:

- **Host and Network Hardware and Software Requirements:** host and network prerequisites for installing the host-side software and running the Access program system.
- **Personal Computer Hardware and Software Requirements:** a review of the personal computer hardware and software requirements discussed in the *AIX Access for DOS Users User's Guide*.
- **Before Installing the Access Program Software:** steps you should take before installing the Access program host software.
- **Installation Instructions:** step-by-step instructions on how to install the Access program host software on your host computer.
- **Access Program Files and Host System Modifications:** a summary of the changes made to your host system as a result of installing the Access program software.

Host And Network Hardware And Software Requirements

Requirements For A LAN Environment

Before installing the Access program host software in a LAN environment, you must have the hardware and software described below.

- One LAN controller card for each host.
- At least 600K bytes of free disk space in the `/usr` file system.
- The AIX operating system, with TCP/IP service.
- Enough network cable to connect the host and personal computers together.
- Appropriate adapters to connect the LAN controller card, network cable, and transceivers (if used).
- Terminating resistors (or "terminators") for the ends of the network cable.
- The Access program software distributed with this book.

Requirements For An RS-232 Environment

Before installing the Access program host software in an RS-232 environment, you must have the hardware and software described below.

- One or more host computers.
- The AIX operating system.
- At least 300K bytes of free disk space in the `/usr` file system.
- One asynchronous communications port for *each* personal computer to be connected.
- Each personal computer connected via RS-232 requires an RS-232 cable with appropriate connectors to attach to an RS-232 port on the host and to an asynchronous communications adapter in the personal computer.
- The Access program software distributed with this book.

Personal Computer Hardware And Software Requirements

The following personal computer hardware and software is required for the Access program operation. Refer to the *AIX Access for DOS Users User's Guide* for further information on personal computer configuration.

- One or more IBM[®] personal computers or IBM PS/2s[™], configured as described in Chapter 1 of the *AIX Access for DOS Users User's Guide*.
- An asynchronous communications adapter for each personal computer to run the Access program over RS-232.
- A network interface board for each personal computer to run the Access program over a LAN. Refer to the *Release Notes* accompanying the Access program personal computer software for a description of network software and boards supported.
- The Access program personal computer software, contained on the Access program distribution diskette.
- PC-DOS, Version 3.10 or later.

Note: For full NLS capabilities, DOS Version 3.3 or later is required, along with an EGA or VGA card and monitor.

Before Installing The Access Program Software

Before installing the Access program host software, check that you have met all hardware and software requirements. Do not install the Access program software if your host is currently running the Access program. If you are reinstalling the software, first remove the Access program from your host.

If you are installing the Access program on more than one host in a multihost network, follow the instructions in the next section, "Assigning Internet Addresses in a Multihost Access Program Network," before proceeding to "Installation Instructions." If your network has only one Access program host, skip the next section and proceed to "Installation Instructions."

Assigning Internet Addresses In A Multihost Access Program Network

The Access program networks use the DARPA UDP/IP protocols for communication between network hosts and personal computers. For these protocols to work properly, all personal computers and hosts on an Access program network must have internet addresses that are both compatible and unique. Assigning personal computer internet addresses is discussed in Chapter 4 of the *AIX Access for DOS Users Administrator's Guide*, under the headings "Assigning Access Program Addresses to Personal Computers" and "Adding Access Program Users." Host requirements are covered here.

All hosts must have:

- Internet addresses in the same class and network.
- Unique host portions of the internet address.

To make sure these requirements are met, follow these steps.

1. Determine the internet address of all hosts by checking the entry in the file `/etc/hosts` corresponding to each host. An easy way to do this is to type:

```
grep hostname /etc/hosts
```

on each host. (If you don't know the name of a host, use `uname -n` to find out.) Assuming that one of your hosts is named `host1`, you would type:

```
grep host1 /etc/hosts
```

to find its internet address. The system response is something like this:

```
89.0.2.19    host1    happy
```

Repeat this procedure for each host, using the appropriate host name.

The internet address has a standard format of four numeric fields separated by periods, as shown in this example.

Make a note of the internet address for each host.

2. Determine the *class* of each internet address. The address class is determined by the first field of the internet address, as follows:

<u>First Field of Internet Address¹</u>	<u>Class</u>
0-127	A
128-191	B
192-223	C

In our example, **host1** has a Class A internet address since the value of the first field (89) is between 0 and 127.

Note the address class for each host on your network.

3. Verify that all hosts are in the same class and network (that is, that they all have the same network portion of the internet address). Depending on the address class used by your network (which you determined in step 2), the network portion is specified in the first field, the first two fields, or the first three fields of the internet address, as follows:

<u>Network Class</u>	<u>Fields Devoted to Network Portion of Address</u>
A	1
B	2
C	3

For instance, consider the following three internet addresses, each representing a different class.

A. Example Class A address:

<u>Network Portion</u>	<u>Host Portion</u>
72	235 . 82 . 101

¹Values shown are decimal. Internet addresses can also use octal or hexadecimal notation using the standard convention of a leading zero to imply octal or a leading 0x or 0X to imply hexadecimal.

B. Example Class B address:

Network Portion		Host Portion	
184	. 132	119	. 23

C. Example Class C address:

Network Portion				Host Portion
205	.	198	.	198 . 2

As shown in these examples, the portion of the internet address not used for the network address is used for the host address.

4. Compare the host portion of the internet address of each host to see if it is unique. If any of your hosts have identical host addresses, you must change the internet address of one or more of your hosts so the host addresses are unique. See the following recommendations if you need to change internet addresses.

Changing The Internet Address Of The Access Program Hosts

You must change the internet address of one or more of your hosts if they don't all have internet addresses in the same class, identical network addresses, and unique host addresses. Changing a host's internet address is a simple procedure provided the only network interface used by your host is to the Access program LAN.

If any of your Access program AIX hosts have other network interfaces (for example, interfaces to DARPA interface message processors), the procedure for changing internet addresses is more complex. If you have such AIX hosts in your Access program network, we assume that you are experienced in the administration of internet addresses.

To change internet addresses on hosts in a simple Access program network (one without multiple network interfaces or external network connections), follow these procedures:

1. Change the entry for your host in `/etc/hosts` to reflect the desired internet address.
2. Reboot the system.

For example, assume you have two hosts with incompatible internet addresses:

- **host1** has an internet address of 184.221.124.32 (a Class B address).
- **host2** has an internet address of 205.198.143.2 (a Class C address).

To work on an Access program network, both hosts must be in the same class, have the same network address, and have unique host addresses. Normally you would keep the existing internet address on one host, so let's assume that you will keep the existing address for **host1** and change **host2** to be compatible. To make this change, follow these steps:

1. The internet address for **host1** is a Class B address since its first field is between 128 and 191. The network address therefore takes up two fields of the complete internet address: 184.221. It follows that the internet address of **host2** must also start with 184.221.
2. The values chosen for the remaining fields of the internet address—the host address—are constrained only by the following considerations:
 - The value of each field must be less than 256 (decimal).
 - The host address must be unique. That is, it cannot conflict with an existing host address on the same network. To meet this requirement, look in the file `/etc/hosts` to find out which internet host addresses have already been used by computers on your network.
 - You cannot use all zeros (0) or all ones (255) as values for all internet host address fields. That is, internet addresses such as 184.221.0.0 should not be used. This requirement exists because the internet broadcast network address is derived from the complete internet address by converting the host portion of the address to all zeros or all ones (depending on the implementation). An internet address with a host portion of all zeros or all ones could therefore conflict with the internet broadcast network address. Note that the restriction against ones and zeros applies to eight-bit bytes filled with binary ones or zeros used for *all* host address fields. Equivalent octal, decimal, or hexadecimal values should not be used. The complete list of prohibited values includes:

<u>Binary</u>	<u>Octal</u>	<u>Decimal</u>	<u>Hexadecimal</u>
0	0	0	0
11111111	0377	255	0xff

Assume that you have checked `/etc/hosts` and found that the addresses 184.221.0.1 and 184.221.0.2 are used by other computers on your network, in addition to 184.221.124.32, which is used by **host1**. You could then assign to **host2** any internet address between 184.221.0.3 and 184.221.255.254, except for 184.221.124.32. Let's assume you choose the address 184.221.0.3.

3. Now edit the file `/etc/hosts` on *both* **host1** and **host2** and change any existing entry for **host2** to reflect the new internet address, or else add an entry if none exists. The standard format for `/etc/hosts` entries is:

internet address official host name aliases

where *internet address* is the address in the standard four-field format with dots separating the fields; *official host name* is the name of your AIX host (which you can determine with the **uname -n** command if you don't know it); and *aliases* is a list of any names other than the official host name by which the computer is known.

If **host2** currently has an entry in **/etc/hosts** of:

```
205.198.143.2      host2      doc
```

you would change this entry to:

```
184.221.0.3       host2      doc
```

Similarly, if **/etc/hosts** on **host1** has no entry for **host2**, you would add to **/etc/hosts** the line:

```
184.221.0.3       host2      doc
```

Any number of spaces or tabs can separate the parts of the **/etc/hosts** entry.

4. Now, reboot both host systems.

Installation Instructions

After assigning the appropriate addresses, follow these steps to install the AIX DOS Server portion of the Access program. If the Access program is already installed, you must first remove the Access program software.

1. Log into the AIX system as root.
2. Be sure that your host filesystem has at least 1500 blocks of disk space available before you attempt installation.
3. Insert the Access program distribution media.
4. Install the AIX DOS Server portion by typing:

```
installp
```

For further information on **installp**, refer to *The AIX Operating System Commands Reference*.

5. Once the installation is complete, remove the Access program distribution media.
6. Invoke the Access program at the shell prompt by typing:

```
sh /etc/rc.pci
```

Once installed, the DOS Server portion of the Access program is invoked whenever your system is restarted.

The Access Program Files And Host System Modifications

Following is a table showing the new Access program files that are created and the AIX files and directories that are modified during the host software installation process. Note that the table shows both LAN and RS-232 files. If you install the Access program to run over RS-232 only, your system will contain a subset of the files shown in the table.

During day-to-day administration of the Access program, you are unlikely to be concerned with the majority of these files. You may occasionally have to modify the files `/usr/pci/pciptys` and `/etc/inittab`. This topic is described in Chapter 4 of the *AIX Access for DOS Users Administrator's Guide*.

The complete table of the Access program files and system modifications is presented here to give you an overview of the Access program host software architecture. For further information on this subject, refer to Chapter 5 of the *AIX Access for DOS Users Administrator's Guide*. The list of files and system modifications is also useful as a trouble-shooting tool. Compare the actual contents of your host file system against this table if you need to verify the presence of the Access program files on your host.

AIX Access for DOS Users Files and Host System Modifications

NEW ACCESS FILES AND DIRECTORIES CREATED BY INSTALL SCRIPT	
/etc/rc.pci	Starts AIX Access for DOS Users daemon servers on host.
/usr/pci	Directory created for the Access program files.
/usr/pci/bin	Directory created for the Access program files.
/usr/pci/bin/aix2dos	Converts AIX-style text files to DOS-style text files.
/usr/pci/bin/charconv	Special-purpose conversion utility.
/usr/pci/bin/dos2aix	Converts DOS-style text files to AIX-style text files.
/usr/pci/bin/errlogger	A utility invoked automatically when the Access program encounters a serious or fatal error. It sends mail to root reporting the problem and also displays the message on the host console.
/usr/pci/bin/lmfmmsg	Extracts a message from a language message file.
/usr/pci/bin/loadpci	Initialization program that starts the pcimapsvr and pciconsvr . Invoked by rc.pci .
/usr/pci/bin/pciconsvr.ip	Daemon that listens for connection request from personal computer LOGIN command. Also broadcasts "pciconsvr 'Host-name' here" messages.
/usr/pci/bin/pcidebug	Controls log output of the executing Access program DOS server. Monitors the bidirectional communication between the PC and the host.
/usr/pci/bin/pcimapsvr.ip	Daemon that listens for broadcast requests for site tables. Also listens for broadcasts from pciconsvr s announcing their presence.
/usr/pci/bin/pciprint	A sample print program that converts characters between DOS and your AIX operating system.
/usr/pci/bin/pcistatus	A file that lists currently running Access program processes.
/usr/pci/bin/pcistop	Terminates execution of the Access program on the host.
/usr/pci/bin/sharectl	Initializes, removes, and prints information about shared memory (depending on the option used).
/usr/pci/dosmsg	Directory created for the Access program message files.
/usr/pci/dosmsg/En.lmf	The English language message file.
/usr/pci/feature	Feature string returned from pciconsvr .
/usr/pci/lib	Directory created for translation tables.
/usr/pci/lib/8859.lcs	Character set translation tables for ISO 8859-1.
/usr/pci/lib/pc437.lcs	Character set translation tables for DOS code page 437.
/usr/pci/lib/pc850.lcs	Character set translation tables for DOS code page 850.
/usr/pci/pciptys	A data file listing pseudo ttys (ptys). Used for terminal emulation.
/usr/pci/versions/3.2/pcidosout.ip	A process created for use during terminal emulation over a LAN. It takes data passed from the AIX shell via the pseudo-tty (pty) and sends it over the network to the personal computer.
/usr/pci/versions/3.2/pcidosout.232	Same as pcidosout.ip , except it is used for terminal emulation over RS-232.
/usr/pci/versions/3.2/pcidossvr.ip	Maintains an exclusive dialogue with BRIDGE.DRV on a personal computer. Executes AIX commands on behalf of the personal computer user and transmits the results back to the personal computer.
/usr/pci/versions/3.2/pcidossvr.232	Same as pcidossvr.ip , but works over RS-232.
/usr/spool/pciolog	A directory that stores files containing debugging information.



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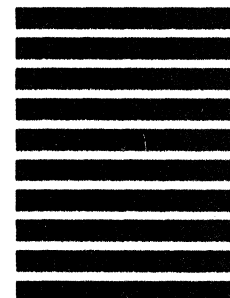
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